|  |  |  |
| --- | --- | --- |
| **Two strain** | **AIC (Weight =** $W\_{i}$**)** | **BIC** |
| Model 1 | Model 2 | Model 3 | Model 1 | Model 2 | Model 3 |
| Macca | **1885.72 (1)** | 2250.65 (0) | 2238.13 (0) | **1927.02** | 2297.46 | 2284.94 |
| Madina | **112.81** **(1)** | 119.52 (0) | 121.26 (0) | **153.85** | 166.04 | 167.77 |
| Riyadh | 7633.14(0) | **5854.53****(1)** | 6041.96 (0) | 7679.17 | **5906.7** | 6094.13 |
| **Single strain** |
| Macca | 4603.14(0) | 2513.59(0) | **2369.36****(1)** | 4625.16 | 2541.13 | **2396.9** |
| Madina | 249.93(0) | **105.87****(1)** | 106.52(0) | 271.82 | **133.24** | 133.88 |
| Riyadh | 6948.23(0) | **5622.47****(1)** | 5961.21(0) | 6972.78 | **5653.16** | 5991.9 |

S19 Table: Multi-model inference quantities (AIC and BIC) for three two-strain and single- strain models. Model with smallest AIC and BIC value are given in bold. For two strain models, Model -1 represents Model-(A) with bilinear incidence function. Model -2 represents Model-(A) with non-monotone incidence and Model -3 represents Model -(A) with saturated incidence. For single strain models, Model -1 represents Model-(B) with bilinear incidence function. Model -2 represents Model-(B) with non-monotone incidence and Model -3 represents Model -(B) with saturated incidence.